

AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning on page 2, line 8 as follows:

FIG. 1 shows an example of prior art that indicates a process for calculating predictive pixel values in a B picture by weighted prediction based on two reference pictures. As shown in the figure, a predictive pixel value P is determined by weighted addition using the pixel values PO and P1 of two reference picture blocks 1 and 2. Both of weighting coefficients a and b in the formula are, for example, 1/2.

Please amend the paragraph beginning on page 3, line 6 as follows:

Here, “>>” means a bit shift ~~shift~~ to the right direction. In other words, “>>7” means “+(2 to the 7th power)”. In addition, the above-mentioned Formula 3 is used when the pixel value indicates the value of a luminance signal. When the pixel value indicates the value of chrominance, the chrominance is expressed by the following formula.

Please amend the paragraph beginning on page 3, line 14 as follows:

FIG. 4 is a flowchart showing concrete calculation steps using these formulas. After Time T, T1 and T1 ~~T1 and T1~~ and T0 and pixel values P0 and P1 are obtained (Step S401), whether Time T1 is equal to Time 0, in other words, whether the denominator of the weighting coefficients W0 and W1 in Formulas 1 and 2 is 0 or not is judged (Step S402). When the denominator is 0 (Yes; Step S402), it is determined ~~determined~~ that the weighting coefficients W0 and W1 are both 128 (Step S403). When the denominator is not 0 (No; Step 402), the weighting coefficients W0 and

W1 are calculated according to above-mentioned Formulas 1 and 2 (Step S404). Lastly, the predictive pixel value P in the block to be coded is calculated using the weighting coefficients W0 and W1 and the pixel value P0 in the reference ~~block 1~~ block1 and the pixel value P1 in the reference block 2 according to above-mentioned Formula 3 or Formula 4 (Step S405). As described above, the predictive pixel value in the block to be coded is calculated using the pixel values in the two reference blocks and performing temporal scaling.

Please amend the paragraph beginning on page 3, line 31 as follows:

Incidentally, in temporal scaling processing like this, divisions are necessary to calculate weighting coefficients as above-mentioned Formulas 1 and 2 show. Since the resource necessary for divisions is larger than that necessary for multiplications, it is common to calculate reciprocals of divisions in advance, store them in a look-up table and the like and perform multiplications using the reciprocals ~~instead in stead~~ of performing divisions.

Please amend the sub-heading on page 4, line 29 as follows:

Summary Disclosure of the Invention

Please amend the paragraph beginning on page 6, line 12 as follows:

Moreover, it is preferable that the moving picture prediction method according to the present invention ~~Claim 1~~ further include comprising a second judgment step of judging whether the first parameter is included in a predetermined range or not, wherein the second prediction step is executed when a result of the judgment in the second judgment step shows that

the first parameter is not included in the predetermined range.

Please amend the paragraph beginning on page 6, line 19 as follows:

Hereby, a limit is put on the first parameter that is the value of a divisor in the scaling processing. When the divisor is within a predetermined range, the processing described above is performed of further judging whether the weighting coefficient identified by the divisor is included in the predetermined range. On the other hand, when the divisor crosses the predetermined range, the scaling processing is performed with a predetermined value as the weighting coefficient. Therefore, when the pixel value in a current picture is determined, the calculation amount for calculating and the memory amount for storing the reciprocals of the divisors are limited to be small.

Please amend the paragraph beginning on page 6, line 30 as follows:

Furthermore, the moving picture prediction method according to the present invention ~~Claim 1 further includes comprising~~ a third judgment step of judging whether the second parameter is included in a predetermined range or not, wherein the second prediction step is executed when a result of the judgment in the third judgment step shows that the second parameter is not included in the predetermined range.

Please amend the paragraph beginning on page 7, line 15 as follows:

In addition, the present invention can be realized not only as the motion vector prediction method like this but also as a motion vector prediction apparatus using the steps included in the

moving picture prediction method like this as means, a moving picture coding method and apparatus as well as moving picture decoding method and apparatus, and a program for causing a computer to execute these steps. Then, the program like this, needless to say, can be distributed through a recoding medium such as a CD-ROM and a transmission medium such as the Internet.

Please amend the paragraph beginning on page 7, line 29 as follows:

In other words, the memory size of the look-up table and the like is reduced. The look-up table stores the number of the reciprocal calculations and the reciprocals required to avoid the divisions for calculating the weighting coefficients in generation of predictive pixel values and motion vectors. Furthermore, the scaling processing is performed with a predetermined significant bit number (16 bits, for example), and enlargement of a circuit size is avoided.

Please delete the paragraph at page 9, line 11 to 13.

Please amend the paragraph beginning on page 12, line 5 as follows:

Here, “>>” means a bit shift ~~sift~~ to the left direction. In other words, “>>7” means “ $\times(2$ to the 7th power).”

Please amend the paragraph beginning on page 15, line 20 as follows:

Furthermore, in the above description, the method for performing the weighted prediction with the predetermined significant bit number by the bit shifts ~~sifts~~ is shown, but it is possible to

use fixed values for BWD and LWD. Using the fixed values for BWD and LWD, the weighting coefficients may cross the significant bit number. In this instance, predetermined weighting coefficients are used as explained below.

Please amend the paragraph beginning on page 19, line 13 as follows:

The motion compensation decoding unit 204 generates motion compensation picture data based on coding mode information and motion vector information at the time of coding. When a block to be decoded is coded in an ~~a~~-inter picture prediction coding mode using two reference pictures, for example, the motion compensation decoding unit 204 obtains pixel values in two reference blocks from two reference pictures using a motion vector extracted by the bit stream analysis unit 201. In other words, the motion compensation decoding unit 204 performs the weighted prediction of the pixel values with the characteristic scaling processing according to the present invention and obtains the pixel value in a block to be processed from ~~from~~ the pixel values in the two reference blocks. Additionally, the motion compensation decoding unit 204 has the look-up table that associates and stores the value corresponding to the distance between a first reference picture and a second reference picture and its reciprocal. The motion compensation decoding unit 204 performs the scaling processing with reference to this look-up table.